

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

SENTIENT SENSORS, LLC,)	
)	
Plaintiff,)	
)	
v.)	C.A. No. 19-1868 (MN)
)	
CYPRESS SEMICONDUCTOR)	
CORPORATION,)	
)	
Defendant.)	

MEMORANDUM ORDER

At Wilmington this 28th day of January 2021:

IT IS HEREBY ORDERED that the claim terms of U.S. Patent No. 6,938,177 (“the ’177 Patent”) with agreed-upon constructions are construed as follows (*see* D.I. 77-1)¹:

1. “oscillator(s)” shall have its plain and ordinary meaning (’177 Patent – Claims 1, 6, 10, 14, & 19);
2. “processor configured to automatically activate from totally deactivated (unpowered) state” shall have its plain and ordinary meaning (’177 Patent – Claims 3, 7, & 12);
3. “a plurality of gates arranged in a field programmable gate array” shall have its plain and ordinary meaning (’177 Patent – Claims 1, 6, 10, & 15);
4. “configured to run independent processes” shall have its plain and ordinary meaning (’177 Patent – Claims 1, 6, & 10).

(*See* D.I. 77-1 at 1).

Further, as announced at the hearing on November 17, 2020, IT IS HEREBY ORDERED that the disputed claim terms of the ’177 Patent are construed as follows:

¹ The parties filed three Joint Claim Construction Charts: D.I. 48, D.I. 75-1, D.I. 77-1. The Court refers to and considers the final chart submitted, D.I. 77-1, Second Amended Joint Claim Construction Chart, dated November 12, 2020.

1. “embedded” shall have its plain and ordinary meaning, specifically, “embedded within the component that is required in that part of the claim” (’177 Patent – Claims 1, 5, 6, 9, 10, 13, 15, 17, & 20);
2. “two internal oscillators coupled to the processor, for providing clock signals for the low-frequency and high-frequency operations” shall have its plain and ordinary meaning (’177 Patent – Claims 1, 6, & 10);
3. “power converter” shall have its plain and ordinary meaning, specifically, a power converter converts power (’177 Patent – Claims 5, 9, 10, 13, 15, 17, & 20).

In addition, for the reasons set forth below:

1. the preamble, which recites “an instrument controller,” is not limiting and need not be construed (’177 Patent – Claims 1–20).

The parties briefed the issues (*see* D.I. 63) and provided technology tutorials describing the relevant technology. The Court carefully reviewed all submissions in connection with the parties’ contentions regarding the disputed claim terms, heard oral argument (*see* D.I. 79), and applied the following legal standards in reaching its decision.

I. LEGAL STANDARD

“[T]he ultimate question of the proper construction of the patent [is] a question of law,” although subsidiary fact-finding is sometimes necessary. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837–38 (2015). “[T]he words of a claim are generally given their ordinary and customary meaning [which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (internal citations and quotation marks omitted). Although “the claims themselves provide substantial guidance as to the meaning of particular claim terms,” the context of the surrounding words of the claim also must be considered. *Id.* at 1314. “[T]he ordinary meaning of a claim term is its meaning

to the ordinary artisan after reading the entire patent.” *Id.* at 1321 (internal quotation marks omitted).

The patent specification “is always highly relevant to the claim construction analysis . . . [as] it is the single best guide to the meaning of a disputed term.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996). It is also possible that “the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.” *Phillips*, 415 F.3d at 1316. “Even when the specification describes only a single embodiment, [however,] the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (internal quotation marks omitted) (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)).

In addition to the specification, a court “should also consider the patent’s prosecution history, if it is in evidence.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). The prosecution history, which is “intrinsic evidence, . . . consists of the complete record of the proceedings before the PTO [(Patent and Trademark Office)] and includes the prior art cited during the examination of the patent.” *Phillips*, 415 F.3d at 1317. “[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Id.*

In some cases, courts “will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the

meaning of a term in the relevant art during the relevant time period.” *Teva*, 135 S. Ct. at 841. Extrinsic evidence “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Markman*, 52 F.3d at 980. Expert testimony can be useful “to ensure that the court’s understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.” *Phillips*, 415 F.3d at 1318. Nonetheless, courts must not lose sight of the fact that “expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence.” *Id.* Overall, although extrinsic evidence “may be useful to the court,” it is “less reliable” than intrinsic evidence, and its consideration “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Id.* at 1318–19. Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999) (citing *Vitronics*, 90 F.3d at 1583).

II. THE COURT’S RULING

The Court’s rulings regarding the disputed claim terms of the ’177 Patent were announced from the bench at the conclusion of the hearing. The Court’s rulings are as follows:

At issue is one patent with four disputed claim terms. I am prepared to rule on three of those disputes. I will not be issuing a written opinion, but I will issue an order stating my rulings. I want to emphasize before I announce my decisions that although I am not issuing a written opinion, we have followed a full and thorough process before making the decisions I am about to state. I have reviewed the patent in dispute and the evidence submitted in the Joint Appendix, including the declaration of Dr. Marwan Hassoun. There was full briefing on each of the disputed terms, and each party submitted technology tutorials. There has been argument here today. All of that has been carefully considered.

Now as to my rulings. As an initial matter, I am not going to read into the record my understanding of claim construction law generally. I have a legal standard section that I have included in earlier opinions, including recently in *Best Medical International v. Varian Medical Systems, Inc.*, C.A. No. 18-1599. I incorporate that law and adopt it into my ruling today and will also set it out in the order that I issue.

Neither party has offered a definition of a person of ordinary skill in the art in their papers, but the parties seem to agree that no disputes as to the person of ordinary skill in the art are relevant to the issues before me today.

Now the disputed terms:

The first term is “an instrument controller.”^[2] Plaintiff argues that the term is in the preamble and is not limiting. And to the extent it needs to be construed [Plaintiff] proposes the construction, “an electronic circuit that provides ‘System on a Chip’ control functions consistent with the performance and operation of an Integrated Circuit device.” Defendant proposes the construction, “[a] multi-chip module instrument controller.” I am not prepared to rule on this term today and will do so in connection with the order that I issue.

The second term is “embedded.”^[3] Plaintiff proposes the construction, “on-chip.” Defendant proposes a construction based on plain meaning, “embedded within the component that is required in that part of the claim.” In other words, it says “embedded in processor, means embedded (i.e., implanted) in the processor; embedded within the FPGA means embedded (i.e., implanted) within the FPGA.”

I will adopt the plain and ordinary meaning of the term “embedded.” I see no reason, however, to construe the word “embedded” to mean “implanted,” which is a word not used in the ’177 Patent. Nor do I see a need to include the parentheticals and explanations in Defendant’s proposed construction. I will thus not adopt that part of Defendant’s proposed construction.

² This term is in the preambles of claims 1–20 of the ’177 patent.

³ This term appears in “embedded memory” in claims 1, 6, and 10, and “embedded power converter” in claims 5, 9, 10, 13, 15, 17, and 20 of the ’177 Patent.

Plaintiff concedes that “embedded” is not explicitly defined in the ’177 Patent. There is also no requirement in the claims that embedding must be “on-chip.”

Plaintiff relies on extrinsic evidence of what a person of ordinary skill in the art would understand “embedded” to mean.^[4] The extrinsic evidence is, according to Plaintiff, “an industry standard overview of memory products” and states that “[e]mbedded memory is any non-stand-alone memory. It is an integrated on-chip memory that supports the logic core to accomplish intended functions.”^[5]

This extrinsic evidence, however, is equivocal. Although the second sentence defines “embedded” as “on-chip,” the first sentence defining “embedded” as “non-stand-alone” is consistent with Defendant’s plain meaning proposal. Furthermore, the extrinsic evidence only offers a definition of “embedded” in the context of “embedded memory” and not in the context of “embedded power converter,” as recited in claims 5, 9, 10, 13, 15, 17, and 20 of the ’177 Patent.

Thus, I will not adopt Plaintiff’s proposed construction of “on-chip” and instead construe the term by its plain meaning, which does not limit the component in which the element is embedded.

The third term is “two internal oscillators coupled to the processor, for providing clock signals for the low-frequency and high-frequency operations.”^[6] Plaintiff proposes the term be given its plain and ordinary meaning. Defendant proposes the construction, “two independent internal oscillators coupled to the processor, for providing clock signals, one for the low-frequency and another for the high-frequency operations.”

Here, I agree with Plaintiff and will construe this term according to its plain and ordinary meaning. Nothing in the claims requires that the two oscillators be independent or that one oscillator provide clock signals for low-frequency operations and another oscillator provide clock signals for high-frequency operations. Certainly, the patent discloses a preferred embodiment of the invention, referencing an independent oscillator and where “one

⁴ (D.I. 63 at 27–28).

⁵ (D.I. 63 at 28 (quoting D.I. 67 at 260)).

⁶ This term is in claims 1, 6, and 10 of the ’177 Patent.

oscillator generates a high-frequency clock signal which is used to clock the microprocessor for high frequency operations” and “[t]he other oscillator generates a low-frequency clock signal for low-frequency operations.”^[7] Further, the written description states that two distinct oscillators are “necessary for power preservation to maintain an independent oscillator that operates at a lower frequency.”^[8] But these appear to be preferred embodiments, and the Federal Circuit has cautioned against reading preferred embodiments into the claims.^[9] I will heed that caution.

The fourth and final term is “power converter.”^[10] Plaintiff proposes the construction, “a converter which changes a voltage level to another voltage level.” Defendant proposes a plain-meaning construction and adds “[s]pecifically, the required power converter converts electrical power.”

I will adopt the plain-meaning construction, that a “power converter” converts power.

Plaintiff does not dispute that power is a function of voltage multiplied by current. Plaintiff concedes that “there can be some instances where certain voltage conversion operations affect current draw causing power fluctuation,” but argues that the claims “require[] only the transformation of one voltage to another.”^[11]

It is true that the specific claims reference transformation of voltage. And it is also true that the specification describes the claimed power converter as converting voltages.^[12]

⁷ (’177 Patent at 7:3–7).

⁸ (’177 Patent at 7:9–10).

⁹ *See CSS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002).

¹⁰ This term is in claims 5, 9, 10, 13, 15, 17, and 20 of the ’177 Patent.

¹¹ (D.I. 63 at 53).

¹² (*See, e.g.*, ’177 Patent, claims 5, 9, 10, 13 (“embedded power converter capable of receiving an input voltage level and generating each operating and reference voltage needed within the instrument controller”); *id.* at 8:55–58 (“internal embedded power convertor performs two key functions: generation of each operating and reference voltage needed within the module and regulation and filtering of power supply irregularities over a very wide voltage range.”)).

Plaintiff's proposed construction would lead to the redundant limitation such that it would mean: "embedded [converter which changes a voltage level to another voltage level] capable of receiving an input voltage level and generating each operating and reference voltage needed."¹³ What I did there was just put their construction into the claim language. Because Defendant's construction of "power converter" both comports with the undisputed definition of "power" and encompasses voltage converters, I am going to adopt Defendant's proposal that a "power converter" converts power.

To be clear, however, I am not deciding whether a power converter requires conversion of more than voltage. That seems like that is an issue of infringement. If, however, after expert discovery there remains an issue and the parties think they can convince me that it is an issue of claim construction rather than infringement, they may raise that again in connection with summary judgment.

As noted, I did not construe the disputed term "instrument controller" at the hearing. I will construe the term now.

The parties dispute, first, whether the term "instrument controller," which appears in the preambles of all claims in the '177 Patent, is limiting (as Defendant proposes) or nonlimiting (as Plaintiff proposes). If this preamble language is limiting, Defendant proposes that "instrument controller" be construed as "multi-chip module instrument controller" and Plaintiff proposes it be construed as "an electronic circuit that provides 'System on a Chip' control functions consistent with the performance and operation of an Integrated Circuit device."

Preambles generally do not limit claims. *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002). A preamble, however, may serve as a claim limitation in certain instances, such as when the preamble "recites essential structure or steps, or if it is 'necessary to give life, meaning, and vitality' to the claim." *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (quoting *Pitney Bowes*, 182 F.3d at 1305). A preamble may

¹³ (See, e.g., '177 Patent, claim 5 at 10:40–43).

also be limiting when the claim limitations in the body of claim “rely upon and derive antecedent basis from the preamble.” *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1339 (Fed. Cir. 2003). On the other hand, when the claim body recites a structurally complete invention and the preamble language is used merely to state the purpose or intended use of the invention, the preamble is generally not treated as limiting the scope of the claim. *Catalina*, 289 F.3d at 808. *See also Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006).

There is no “litmus test” for determining whether preamble language is limiting. *Catalina*, 289 F.3d at 808. Rather, whether such language is limiting is assessed in regard to “the facts of each case in light of the claim as a whole and the invention described in the patent.” *Storage Tech. Corp. v. Cisco Sys., Inc.*, 329 F.3d 823, 831 (Fed. Cir. 2003). *See also Am. Med. Sys., Inc. v. Biolitec, Inc.*, 618 F.3d 1354, 1358 (Fed. Cir. 2010); *Catalina*, 289 F.3d at 808 (“Whether to treat a preamble as a limitation is a determination resolved only on review of the entire . . . patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.” (internal quotation marks and citation omitted)).

Here, I conclude that the preamble recitation of “an instrument controller” is not limiting. Although Defendant argues that “an instrument controller” in the preamble serves as antecedent basis for “the instrument controller” in the body of certain claims,¹⁴ I disagree. The body of the

¹⁴ The body of claim 1 recites, “a second portion of the gates in the field programmable gate array is configured to operate as a signal distribution matrix for rerouting signals within the *instrument controller*.” (’177 Patent, claim 1 at 10:17–20 (emphasis added)). Similarly, claim 2 recites, “a third portion of the gates in the field programmable gate array is configured to activate the instrument controller from a deactivated state, or to deactivate the *instrument controller* from an active state.” (’177 Patent, claim 2 at 10:22–25 (emphasis added)). And claims 5, 9, and 10 of the ’177 Patent recite a field programmable gate array “configured to operate as an internal embedded power converter capable of receiving an input voltage level and generating each operating and reference voltage needed within the *instrument controller*.” (’177 Patent, claim 5 at 10:40–43; *id.*, claim 9 at 11:19–23; *id.*, claim 10 at 11:51–55 (emphasis added)).

claims recites a structurally complete invention, including, *e.g.*, storage, processor, oscillators, gates, and converters. The preamble language is used merely to give a descriptive name to those components as a whole. It does not provide essential structure to the claimed invention or any context essential to understanding those components. *See Am. Med. Sys.*, 618 F.3d at 1359 (preamble term “photoselective vaporization of tissue” did not provide antecedent basis for the terms “vaporization of tissue” or “tissue” because the preamble did not provide any context essential to understanding those terms). The reference to the instrument controller in the body at the end of the claim does not change that. Indeed, the references in the body of the claims simply indicate that all of the claimed structural limitations are within the instrument controller.

Finding that the term “instrument controller” is not limiting, the Court declines to construe it.



The Honorable Maryellen Noreika
United States District Judge